LLNL at SC03

The annual high-performance computing and networking extravaganza, SC03, was held last week in Phoenix and LLNL was well represented. SC03 was an exciting meeting in many ways, not least of which was the buzz surrounding Linux super-clusters and IBM's BlueGene/L technology. This was the coming out party for Linux-based supercomputing as such machines took seven of the top ten slots on the new Top 500 list. LLNL's MCR and ALC clusters were two of these machines, and our ASCI White system was also in the Top 10. Our new Thunder machine was announced at the meeting (see story) and is expected to take over the #2 position when it is delivered. IBM's revolutionary BlueGene/L machine has attracted a lot of attention recently, and it debuted at #73 on the list—and this was only 1/128th of the machine! When fully built and delivered to LLNL next year, this machine will be capable of 360TF peak and will easily recapture the #1 position on the list. BlueGene/L also earned HPCWire's Editors Choice award for the most innovative HPC technology in 2003.

In addition to the technology announcements, this year's program also featured top-notch technical presentations in the technical sessions, the poster session, and in the many research exhibits. LLNL's computational science prowess was highlighted in NNSA's ASCI Tri-Lab booth and in the Office of Science's SciDAC booth. The Department of Homeland Security's budding advanced scientific computing program featured early accomplishments by LLNL, ORNL, and SNL.

Several LLNL researchers and academic collaborators presented technical papers. Two of these were nominated for best paper awards. Bronis de Supinski and Andy Yoo (both of CASC) were nominated for their paper, *Identifying and Exploiting Spatial Regularity in Data Memory References*. Shawn Dawson, Rob Neely (both of DCOM) and Terry Jones (ICCD) were nominated for their paper, *Improving the Scalability of Parallel Jobs by Adding Parallel Awareness to the Operating System*. In addition, our ISCR collaborator Omar Ghattas of Carnegie Mellon University was part of a team that won a Gordon Bell award for high fidelity earthquake modeling. Another ISCR collaborator, Kwan-Liu Ma of UC Davis, was part of a team that presented visualization results for the earthquake results. Lori Freitag Diachin (CASC) and ISCR Director David Keyes (Columbia University) presented LLNL work on generalized meshing and scalable solvers, respectively, in the SciDAC booth. Keyes also made a presentation on the 2003 Office of Science report, *A Science-based Case for Large-scale Simulation.*

Finally, congratulations to our very own **Jim McGraw**, who served as the Conference Chair for this year's record-breaking meeting!